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LEARNING WITH FACILITATION AFFORDANCES: THE CASE OF CITIZENS' ADVICE SERVICES

Complete Research

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Abstract

How can employees be qualified to provide sound customer advisory services? How can they be empowered to deliver the value of public sector modernization to customers? In this paper, we offer a novel approach to qualify service personnel on-the-job using "facilitation affordances". In this approach, artifacts, providing appropriately designed facilitation affordances, are introduced into service personnel's work practices. These facilitation artifacts invite them to start experiential learning, and, hence, to improve their advice giving behavior. To develop our approach, we followed a design research approach, here we developed a set of design requirements and, ultimately, five design principles for facilitation artifacts. We tested our approach in the context of citizens' advice services in public administrations. We implemented a prototype facilitation artifact and conducted a user study with six real-world advisors and twelve clients. Our preliminary results show that the "learning with facilitation affordances"-approach promises to enhance the service personnel's skills that matter in modern public administrations. Furthermore, with the proposed qualification approach and the design principles for facilitation artifacts, we seek to deepen the knowledge on the importance of affordances for learning and, concurrently, provide practitioners with useful guidelines to implement the "learning with facilitation affordances"-approach in their organizations.

Keywords: citizens' advice services, affordances, experiential learning, qualification.

1 Introduction

An increasing number of organizations strive to distinguish themselves by offering a superior service. A critical point is the face-to-face "service encounter", where service personnel advises clients. How can service personnel be qualified to provide sound customer advisory services? How can they learn to make best use of modern technologies to create a unique customer experience? Different researchers showed that today's front office administrators miss the necessary skills to provide the desired level of citizen advisory services (cf. Andersen, 2006; Giesbrecht et al., 2011; Hielscher and Ochs, 2009; Schwabe, 2011). In face-to-face advisory services, personnel face constantly altering and expanding service catalogues, changing service goals and introduction of new information technology. Life-long qualification is essential. In this paper, we present a novel approach to these issues: We propose to offer the advisors "facilitation affordances". Appropriately designed affordances will gently move advisors to try them out during service encounters. Our working hypothesis is, that these trials foster an improved advice giving behavior.

We test our working hypothesis in the area of citizens' advice services. Today, cities increase their efforts to bind their citizens through an improved service (Accenture, 2005). However, in many cases they rely on the service agent's natural talent to give advice, which results in a large variance of service quality. Systematic training is frequently regarded as too expensive and - if given - service agents struggle to transfer the knowledge to their work place. Training-on-the-job by peers has some value in transferring established knowledge but is ill-suited for novel counseling approaches. We will take a more in-depth view at the situation of the public service agents in section 4. Before that, section 2 will give the necessary background information on service encounters, on advisory services and on the necessary skills to provide them. In this context we will argue, that advisors can benefit from group moderation skills. We will then introduce our qualification approach blending "affordances" into experiential learning. Section 3 will give an overview over the research design. Following our design science research approach, we provide a thorough problem analysis in section 4, continue, in section 5, with the design of the "facilitation affordances", the principal component of our qualification approach, and finish the description with a presentation of the evaluation's results in section 6. The contributions of this paper will be elaborated on in the discussion in section 7. In brief, they are, first, our novel qualification approach, which is preliminary supported in our evaluation, and, second, a set of principles for designing facilitation affordances. Conclusions will present implications and present the significance of our findings.

2 Background and related work

2.1 Face-to-face advisory services and the skills employees need

Central to the delivery of organizations' services are the encounters between employees and customers. In these service encounters, front-line personnel needs to provide services to standards that, on the one hand, meet the organization's demands, and on the other hand, fulfill the customers' expectations. These aspects are well discussed in service marketing literature focusing on service quality and customer satisfaction (e.g., Davidow, 2003; Parasuraman et al., 1988). Therein researchers describe the fundamental elements of high-quality service encounters and deduce the correspondent characteristics of the service-providing personnel (e.g. reliability, responsiveness or empathy). In a second body of service encounter literature from work psychology and human resource management, authors focus on service sector workers and their job satisfaction, performance or wellbeing (e.g., Bradley et al., 2010; Dollard et al., 2003). They emphasize the social aspects of service encounters and describe the service worker's needs, how they should be fulfilled and their influence on service outcome.

To give comprehensive, sound advice in the service encounter, service personnel need to master a multitude of skills: customers not only expect employees to conduct transactions, e.g. book a flight in a travel agency or transfer money at a cashier's desk. They aspire to enhance their actual social situation holistically and thus have more complex information needs. In this situations, service personnel has to become distinct advisors, guiding their clients through a structured problem solving process (e.g., Mutzeck, 2008; Schenk and Schwabe, 2011; Schmidt-Rauch and Nussbaumer, 2011; Simon et al., 1987): In the initial problem elicitation phase, they need to explore the clients' problems and needs in order to create a thorough understanding of the clients' situation. In the subsequent solution finding phase, the advisors search for and present possible solutions to their clients and jointly decide about the most suitable ones. In doing so, the advisors first need to apply appropriate techniques and utilize available tools and information resources to support the individual problem solving activities. Second, they constantly need to maintain a close relationship to their clients, making them co-creators of the advisory service's final product. These basic areas, wherein advisors should master concrete skills correspond precisely with those known in the research literature on group moderation or facilitation (Bostrom et al., 1993; Briggs and de Vreede, 2011; Briggs et al., 2009; Clawson et al., 1993; Hayne,

1999; Kolfschoten et al., 2006; Schwabe, 1995): a) guide clients through a structured process, b) apply available tools and information sources beneficially within this process, while, c) establish and sustain a close relationship to the clients. (In section 5.1, we discuss further details on facilitation skills.) Thus, to give sound advice to and create a corresponding service experience for customers, service personnel should develop the corresponding skills and act as facilitators.

2.2 Qualifying service personnel on-the-job

Professional knowledge has a large and important tacit dimension (Eraut, 2000). This “know-how” knowledge has to be transferred effectively to employees in order to empower them in their work environment. Here on-the-job training is frequently superior to off-the job courses as it is easier to apply the gained knowledge to the personal work situation. Learning from others is one of the most frequently applied method of learning in the workplace (Eraut, 2004; Skule, 2004). Organizations use peer-to-peer methods, like e.g., shadowing, apprenticeship, mentoring, coaching or creating informal communities of practice (Eraut, 2007; Guile and Griffiths, 2001; Skule, 2004) to qualify their employees. They want to shorten the “fit for work”-time and ensure that employees acquire all skills and knowledge, explicit or tacit, necessary to provide sound customer services. However, these home-grown qualification approaches have significant disadvantages: Employees foremost learn from their senior colleagues and, therewith, the knowledge and skills, which are already part of the current work practices. We argue, that novel advisory approaches comprising novel skills can hardly be transmitted this way. Furthermore, the differing didactic capabilities of these senior “teachers” as well as their varying work experience and educational background can strongly affect the exchange of knowledge. Ultimately, the resulting competences of the employees can vary to a large extent.

Current research literature on on-the-job qualification mostly offers experience-based approaches (also referred to as experiential learning; (Kolb 1984; Andresen et al. 2000) as an approach to systematically develop skills. It is well-suited to facilitate the transfer of tacit knowledge, and, thus, are broadly used in work contexts (Eraut, 2007; Guile and Griffiths, 2001; Hansen et al., 1999; Smith, 2001; Engelström, 1987). Hansen et al. (1999) and Smith (2001), showed, for instance, how employees use “hands on” measures to convey their tacit knowledge. Eraut (2007) provides in his study a comprehensive analysis of current on-the-job qualification measures focusing on explicit as well as tacit knowledge transfer between peers. In line with these research findings experiential learning (Kolb, 1984) constitutes a suitable methods to qualify service personnel.

Kolb (1984) pointed out “that knowledge results from a combination of grasping and transforming experience”. In his experiential learning concept, learners need to go through a distinct learning cycle of four steps to acquire new knowledge and skills. They should, 1) be enabled to actively experiment, 2) make concrete experiences, 3) reflect on these experiences and 4) abstract and conceptualize new knowledge. Accordingly, this experiential learning cycle needs to be initiated at some point in the on-the-job qualification efforts. In our paper, we will use the experiential learning cycle from Kolb (1984) as it is widely used in multiple studies investigating learning in the workplace (Guile and Griffiths, 2001; Marsick and Watkins, 2001; Sheehan and Kearns, 1995). Other experience-based learning approaches with similar learning cycles, like e.g., expansive learning (Engelström, 1987), may also be a possible approaches.

In our study we introduce a novel approach using affordances to initiate experiential learning cycles and thus complement experiential learning as on-the-job qualification measure. *Affordances* describe the action possibilities provided by an artifact’s characteristics to its users, which emerge at the time of interaction (Stoffregen, 2003; see also Jones, 2003; Gibson, 1977) , e.g. when using a jug, a handle suggests to a user to lift it rather than pushing it. Hence, affordances suggest to users to follow certain behaviors, methods or modes of usage. Even more, users are able to perceive an artifact’s affordance directly without additional cognitive effort (Fayard and Weeks, 2007; Zillien, 2008). In the context of IT-support, different researchers showed, that correspondent artifacts have large potential to function

as instructional systems engaging learners in critical thinking and thus promote learning (e.g., Jonassen et al., 1998; Jonassen, 1999; Young, 2003). Thus, when integrating artifacts providing educational affordances in an employee's work environment, they have the potential to help starting experiential learning cycles. The useful properties of affordances to guide individuals in their learning behavior are also described by a number of researchers who investigate affordances in various educational contexts. Some authors identified learning affordances for particular technologies, e.g. 3D virtual environments or PDA's, (Dalgarno and Lee 2010; Churchill and Churchill 2008), others analyzed the fundamental relationship between affordances and learning technology (e.g. Bower 2008; Kirschner 2002). However, they do not address concrete learning approaches, like e.g. experiential learning. Furthermore, they do not address characteristics of on-the-job learning and thus do not account for the work environment and its influences on learners or learning behavior.

Thus, in this paper, we bridge the identified research gaps in on-the-job qualification. We present a novel on-the job qualification approach blending affordances into experiential learning. In this approach, we integrate an artifact, containing appropriately designed facilitation affordances, into service personnel's daily work practices. We refer to artifacts, which provide facilitation affordances, as *facilitation artifacts*.

3 Research design

To answer our working hypothesis and develop our design contributions, we followed a design science research approach as proposed by Peffers et al. (2007) consisting of six activities. The design science approach is well suited to solve such "wicked design problems", characterized by changing requirements caused by an ill-defined environment and by a dependence upon human cognitive abilities (Hevner et al., 2004) In this paper, we address the six activities in the following three parts:

Problem specification (*addressing first and second activity*): Based on prior research, we analyzed front office employees' current work practice and highlighted the problem and its relevance (section 2). We identified the most critical facilitation-related deficiencies and formulate concrete solution objectives that facilitation artifacts should accomplish.

Design (*addressing third and fourth activity*): Based on these insights, we describe how facilitation artifacts should be designed in order to support employees to develop the missing facilitation skills (section 4): First, based on current research literature on facilitation, we derived design requirements that facilitation artifacts should meet. Second, we highlight how these artifacts should be designed by providing generic design principles, which build the foundations for creating facilitation affordances. Furthermore, we show how they could be instantiated in an IT-system supporting front office employees and clients in their face-to-face advisory sessions.

Evaluation (*addressing fifth and sixth activity*): To show that our qualification approach, using facilitation artifacts, enable front office employees to effectively develop their facilitation skills, we conducted a test with real-world users. The details of the evaluation are presented in section 6.

4 Problem specification: The case of citizen advisory services

Today's citizens increasingly perceive themselves rather as customers than petitioners of public administrations. Correspondingly their expectations regarding service quality rise when seeking advice within public administrations' front offices (Accenture, 2005; Fountain, 2001; Schedler and Proeller, 2000). Today's front office administrators lack the necessary skills to provide the desired level of customer services (cf. Andersen, 2006; Giesbrecht et al., 2011; Hielscher and Ochs, 2009; Schwabe, 2011). Furthermore, a number of researchers describe the goals citizen services should accomplish and what skills modern public administration employees should have to perform these services (cf.

Denhardt and Denhardt, 2000; Hummel and Kremer, 2003; Leitner, 2006; Schuppan, 2010; Schwabe, 2011). However, they barely discuss how front office employees could develop these skills.

In the following paragraphs we want to highlight the facilitation-related deficiencies that today's public employees show, when giving advice to clients, i.e. citizens. We separate our findings into a) "process design"-related, b) "tools"-related, and c) "social interaction"-related deficiencies, as these cover all relevant areas where advisors should master the needed skills (cf. 2.1). We build our findings on prior research about front office employees' current work practices (Giesbrecht et al., 2011; Schwabe et al., 2010a, 2010b).

"process design"-related deficiencies: In their face-to-face advisory encounters, today's front office administrators restrict themselves on superficial information provision as "counter services", i.e. impersonal processing of transactions, showing basically no structured advisory process. They do not define clear objectives for the advisory session impeding the creation of a conversation structure and missing to lead the citizen through their advisory session. As a consequence administrators switch during the advisory session unpredictably between exploring the citizen's needs and seeking suitable solutions to his needs. In detail, they leave the conversational lead to the client by just answering their direct questions. Front office administrators show little or no proactive behavior. They opportunistically shorten the advisory process by restricting the session to answer just one or two questions of the citizen and then close the conversation.

This raises the question how to bring front office administrators to establish a distinct problem-solving process during their advisory sessions. Correspondingly, we formulate a first solution objective that our new qualification approach should accomplish and that enables advisors to establish a more structured advisory process (SO1).

"tools"-related deficiencies: In their current practice, front office administrators make only little use of available tools, i.e. auxiliary means to support their activities during the advisory session with the citizen. Their usage restricts to accessing information, either by searching and handing over standardized forms, leaflets or brochures, or by accessing IT systems. Furthermore, they hardly integrate them into the advisory process as they only extract the information needed and provide it verbally to the citizen. As a result the applied tools are more likely to act as information or communication barrier between administrators and citizens. With their erratic usage behavior front office administrators reveal their deficiencies regarding appropriate utilization of existing tools and information resources. The rationale for their behavior emphasizes this deficiency even more: Administrators justify their tool usage behavior by referring to the insufficiency of the available tools. However, they refer at the same time to their inexperience with the same tools.

This raises the question how front office administrators can develop an appropriate tool usage skills. Accordingly, we formulate a second sub solution objective to enable advisors to integrate available tools seamlessly and beneficially into the ongoing advisory encounter with the client (SO2).

"social interaction"-related requirements: From citizens' perspective, today's front office administrators are perceived as socially competent, that is, they respond to their individual questions and always provide them with information. However, from a skilled facilitator's view, administrators establish an insufficient relationship to their clients: Interactions are restricted on receiving the citizen's concrete requests, e.g. "I want to register myself!", and on delivering information verbally or by means of standardized documents like leaflets or brochures. They do not create a participative environment which is needed to provide a client-centered, personalized service. These findings were also described by Hielscher and Ochs who showed in their study (2009) that from 41 observed advisory sessions only two were conducted in the desired "co-productive" manner and only 17 where of a "supporting, client-centered" interaction-type.

This raises the question, how to bring front office administrators to establish a close relationship to the advice-seeking citizens integrating them as equal co-creators. Thus, we formulate a third sub solution

objective to enable advisors to establish a more open and participative work environment during the advisory encounter with the client (SO3).

5 Design principles for facilitation artifacts

In this chapter we describe how front office administrators can be provided with appropriately designed facilitation affordances. Therefore, we describe what corresponding facilitation artifacts should accomplish and specify how facilitation artifacts should be designed by developing five generic design principles, representing the basic concepts for designing facilitation affordances.

The duties and responsibilities of facilitators are well discussed in research literature (Bostrom et al., 1993; Briggs and de Vreede, 2011; Briggs et al., 2009; Clawson et al., 1993; Hayne, 1999; Kolfshoten et al., 2006; Schwabe, 1995). In their studies, Bostrom et al. (1993), Clawson et al. (1993), and Schwabe (1995) explicate the individual tasks that facilitators need to implement. Briggs et al. (2009) proposes a seven layer model for collaboration that can be used to guide facilitator when designing group work. Kolfshoten et al. (2006) summarized “high-value recurring collaborative tasks” in their concept of ThinkLets and therewith provide designated facilitators with best practice collaboration patterns.

In the following paragraphs, we report from our analysis of the current research literature on facilitation and develop five concrete design principles that facilitation artifacts should be built upon to support front office administrators to become skilled advisors. In addition, we describe how these design principles can be implemented within a concrete IT-system, supporting advisors and citizens in their face-to-face advisory sessions.

Design principle “establish a shared information space”: In their role as facilitators, advisors need to use activities and technology as well as their communication skills to get the individual client involved from the very beginning in co-creating the advisory session’s outcome (Bostrom et al., 1993). Therefore, their mutual information exchange needs to be supported. Clawson et al. (1993) described a facilitator corresponding tasks as creating and reinforcing an open and participative environment, i.e. all participants need transparent access to all information relevant to their collaboration (Nussbaumer et al., 2012). Furthermore, they should be enabled to communicate, verbally and non-verbally, without any barriers hindering them (Heinrich et al., 2014). This collaborative work environment defines to a large extent the context of use for all further support functions and, thus, forms the foundation for a facilitation artifact. Therefore, we propose to *establish a shared information space*, which should be maintained throughout the advisory session and wherein advisors and clients can act as equal collaboration partners.



Figure 5.1: Physical setup in an advisory session supported by the CitizenExplorer as facilitation artifact; advisor (right), client (left).

Implementation: To establish and enforce a shared information space throughout the advisory session, we used a 20-inch touchscreen device (Sony Vaio Tap 20) as physical medium of the CitizenExplorer. Furthermore, we positioned advisors and clients in a 90°-135° degree angle in front of the device as depicted in figure 5.1. Within this physical setting all participants could monitor the screen and additionally were enabled to interact with the artifact.

Design principle 2 “provide problem-solving spaces”: In their role as facilitators, advisors need to ensure that the advisory session’s outcome will be established, i.e. enabling clients to resolve their problems on their own (Bostrom et al., 1993). Therefore, they need to establish and actively direct a structured advisory process (Clawson et al., 1993). The advisors need to choose appropriate problem-solving activities and guide their clients through them. To support the users in their problem-solving activities, we propose to build the facilitation artifact on *problem-solving spaces*: For each phase of the problem-solving process, one space is provided. Users always work in one of these spaces encapsulating all information and tools necessary to carry out the corresponding problem-solving activity. The spaces must not overlap with one another and thus concentrate the advisor’s focus on one distinct phase of the advisory process. Within a particular space advisors can use the entire “inventory”, i.e. provided tools and information resources, to adapt the individual problem-solving activity to the clients’ needs. In good collaborations, all participants work toward a common goal and are aware of the intermediate products needed to accomplish this goal (Briggs et al., 2009). In the context of their advisory sessions, advisors as facilitators need to assure that all results from individual problem-solving activities are externalized in form of tangible or intangible products (ibid.). Accordingly, they need to understand the output created by tools and information resources, in order to integrate them in the advisory session’s final outcome.

Design principle 3 “integrate slight process change bumps”: Provided with problem-solving spaces, advisors need to separate the individual problem-solving activities in order to establish a structured, goal-oriented collaboration (Clawson et al., 1993). Accordingly, they need to switch between those spaces during their advisory collaboration with the clients. In doing so, the transition between those spaces should not affect the close relationship between the participants or their constant interpersonal communication (Nussbaumer et al., 2012). Therefore we propose to integrate “*slight process change bumps*” to switch between the individual spaces. This means users should be provided with clear transition actions between two spaces to, which require cognitive effort to be executed but do not to impair ease of use of the facilitation artifact.

Implementation (for providing problem-solving spaces and integrating slight process change bumps): To implement the described “spaces”-metaphor, we created separated screens representing the individual advisory phases: problem elicitation and solution finding. Each screen contains all tools and information sources needed to complete the respective phase. On the problem elicitation screen (cf. figure 5.2, upper left), users can create individual memo cards (yellow) to externalize the client’s problems. The “slight process change bumps” were implemented within magnifier icon on the memo cards. When pressing this icon the solution finding screen opens, which is divided in three sub-screens (cf. figure 5.2 upper right, lower left/right). The sub-screens can be accessed using the three icons (tabs) on the left (watch, map and document icon).

Design principle “use well-known metaphors”: In their role as facilitators the advisors need to act as “process guides” (Briggs and de Vreede, 2011) and actively influence the advisory encounter towards the initially defined outcome (Clawson et al., 1993). To support the individual problem-solving activities, they need to integrate available tools and information resources into the advisor-client collaboration. Advisors have to ensure that used tools do not become information or communication barriers between them and their clients (Rodden et al., 2003). They need to know how to apply tools to structure information, e.g. when exploring the citizen’s problems, or improving the information quality, e.g. when searching for suitable solutions (Briggs et al., 2009; Clawson et al., 1993). To establish an effective collaboration in the individual problem-solving activities advisors need to apply appropriate collaboration techniques (Briggs et al., 2009). Thus, they should introduce adequate collaboration material and edit it together with their clients to establish an effective collaboration (Shrage 1992). Thereby

collaboration material comprises information (e.g. text documents or pictures) and collaboration tools (e.g. mindmap or discussion tool) that can be accessed and edited by all participants. In this context, when working with the facilitation artifact, users should be encouraged to start exchanging information within their collaboration, thus, generating and exchanging ideas, problems, wishes, etc. To promote these behaviors we propose to *offer collaboration material and corresponding tools by using well-known metaphors including distinct “empty areas” and corresponding triggers to fill them with information*. With the visualization of fill-able empty areas we want to stimulate users to externalize information within the shared information space (first design principle).

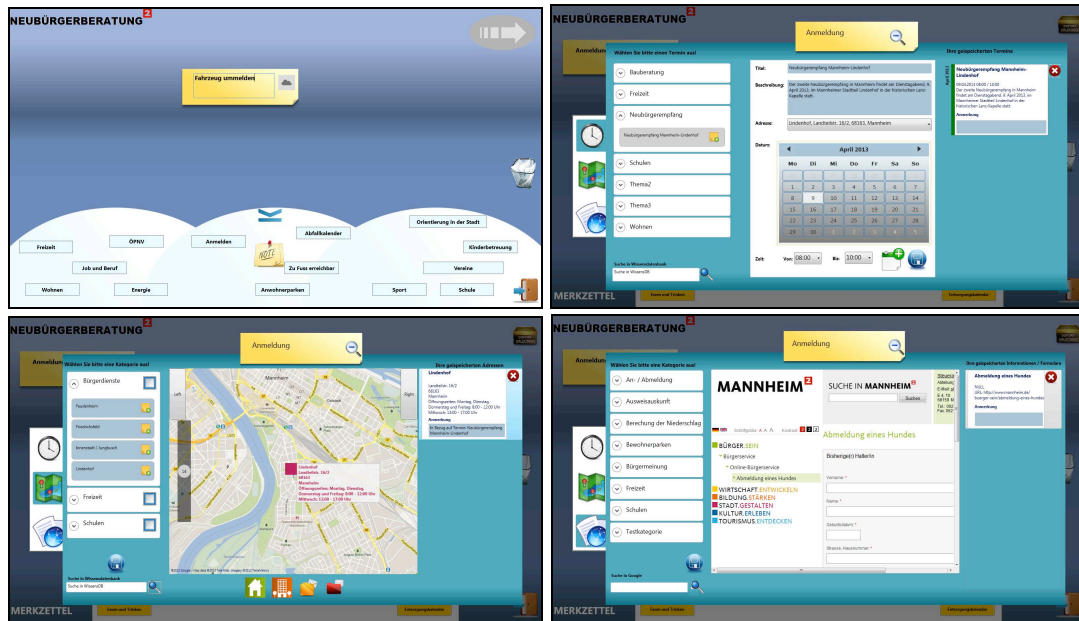


Figure 5.2: The problem elicitation screen (upper left) and the solution finding screens with its sub-screens: time-related (upper right), location-related (lower left), and activity-related (lower right) governmental information.

Implementation: Within the problem elicitation phase, we provide the users with a “memo card”- as well as a “tag-cloud”-metaphor (cf. figure 5.2 upper left) to engage them in the collaboration pattern “generate” (Briggs et al., 2009). Furthermore, we provided distinct “empty areas” to stimulate advisors and clients to think about problems and needs (cf. the blue area on the problem elicitation screen). In the solution finding phase the users should be directed to “reduce” the solution information toward the most suitable one. Therefore, we applied a “list”-metaphor enabling users to browse through available solution information and provide a detail-view like a geographical map to “clarify” an individual solution (cf. figure 5.2; in the middle of the three sub-screens of the solution finding screen).

Design principle “enwrap existing tools and information resources”: During the advisory encounter with the clients, advisors need to handle a multitude of tools and information resources, both analogous and digital, to search, access or edit information. In their role as facilitators, working in a shared information space with the clients, they have to understand how to integrate existing tools, e.g. the population register’s search interface, beneficially into the advisor-client-collaboration. Therefore, we propose that *a facilitation artifact should enwrap existing tools and information resources and include them in the advisor-client-collaboration*. Therewith, advisors should be encouraged to discover novel, collaborative types of usage, like provide information to support structuring the collaboration or to externalize information of individual problem-solving activities.

Implementation: We embedded information resources like an internal knowledge database or the city's official websites in the space, where they are needed and provided a visualization matching the activity of the space. The internal knowledge database's information, useful in the problem elicitation phase, was visualized by using a "tag-cloud"-metaphor. Therewith, advisors and clients could explore the content of the database without explicitly "accessing the database" (cf. figure 5.2 upper left). Furthermore, we embedded available information resources and editing tools in the solution finding phase by providing an appropriately designed search interface (cf. figure 5.2, upper right, lower left/right) so that users could browse through the information sources with their different information types: time-related like opening hours, location-related like addresses, activity-related like digital forms or online-services. Therefore, users are provided with a suitable visualization of details, e.g. a calendar, a map or a document/website viewer.

6 Evaluation Design and Data Collection

To evaluate whether our novel qualification measure enables front office administrators to effectively develop their facilitation skills, we conducted a test with real-world users. Therein, six front office administrators (=advisors) from a major German city conducted 24 advisory sessions, in total. The five female and one male advisor were between 20 and 57 years old (avg.: 32.7) and have accordant work experiences as public administrators. To assess the changes in the advisors' advice giving behavior, when working with the facilitation artifact, the test was designed with a pre-intervention, an intervention and a post-intervention part. Concretely, an advisor first conducted a conventional advisory session at her/his normal workplace; subsequently as intervention, s/he conducted two artifact-supported advisory sessions and then finished the test with another conventional advisory session. The "intervention", i.e. the artifact-supported sessions, was conducted as experiential learning episode where the advisors could experience novel advice giving behaviors. Therefore, twelve "new-in-town"-citizens were recruited from the city's population. The six female and six male clients were between 18 and 74 years old (avg.: 39.5) and had different educational and social background. During the test it was assured that firstly an advisor gave advice to four different clients and secondly that each client experienced a conventional and an artifact-supported advisory session. The only instruction the advisors received was a 40-minutes technical introduction to the IT-tool, i.e. the facilitation artifact. Therein only technical functionalities were explained, no advice giving behaviors were communicated. Each advisory session lasted about 25 minutes, in which there was no significant difference between conventional or artifact-supported sessions.

We recorded all 24 advisory sessions with video cameras and analyzed the videos to identify the objective changes in advisors facilitator-related behavior by comparing pre- and post-intervention advisory sessions. Furthermore, advisors and clients were asked to give their subjective feedback and evaluate the given/received advisory sessions quantitatively by means of a questionnaire and qualitatively in a semi-structured interview. The items of the questionnaire based on the IMI measuring tool (intrinsic motivation inventory, Deci and Ryan, 2003; used in different studies e.g. McAuley et al., 1989, Markland and Hardy, 1997, Ryan et al., 1991). Participants rated statements on a 7-point Likert scale regarding their *perceived competence*, e.g. "I am satisfied with my performance within the given advisory session", their *perceived choice*, e.g. "I believed I had some choice to adapt the advisory process to the client." and their *relatedness*, e.g. "During the advisory session, I felt close to the client." (the clients' items were rephrased accordingly). Focusing on advisors' competencies we additionally asked for assessing the different types of competencies (Erpenbeck and von Rosenstiel, 2007), especially media and personal competence as professional and methodical competence is covered above. The interview's question catalogue comprised the same categories as the questionnaire in order to learn about the participants' rationales behind their observed behaviors or questionnaire-answers.

7 Results

In the test, all six advisors showed in their post-intervention advisory sessions, i.e. after working with the facilitation artifact, substantial changes in their advisory behaviors. In the following paragraphs we report from our findings when comparing pre- and post-intervention advisory sessions. We highlight on a detailed level to what extent the advisors enhanced their facilitation skills, showing that the defined solutions objectives (SO1 to SO3) were met.

Applying “process design”-related skills (SO 1): In the pre-intervention advisory sessions all advisors followed the known pattern of reactive answering the clients’ concrete questions. In contrast, three of six advisors applied, in their post-intervention sessions, a distinct problem elicitation phase by taking the lead in the conversation by proactively asking further questions. In the interviews those three advisors gave reason to their behavior stating that they saw the benefit of collecting the clients’ problems collaboratively. More efficient information was exchanged and additionally a quicker mutual understanding of the problems was realized. Also in their solution finding activities the advisors showed substantially more self-initiatives. Instead of one-way-communication like “the answer to our request is ”, four of six advisors started to additionally search through available information sources, e.g. the official website of the city or a leaf-let, and discussed the information found with the clients regarding usefulness. One advisors gave reason to her behavior: „When I discussed the solutions with the client, I could reveal further problems and resolve them directly [...] it was like talking about the terms in the white cloud [in the CitizenExplorer].“ (all quotes were translated to English by the authors).

Applying “tools”-related skills (SO 2): In our test, the advisors showed the most significant changes in their advisory behaviors regarding the utilization of available tools and information resources. In the pre-intervention advisory sessions, they used additional tools or information resources scarcely and only collected information for their own use and passed them verbally to the clients. This comprised not only digital, but also analogous resources (e.g. brochures), which were only given to clients as additional self-study material. Yet, in the post-intervention sessions, two of six advisors started to use the desktop PC as explanation aid, i.e. as collaboration material, and turned the screen so both could watch the information on the screen. Furthermore, two of the remaining four advisors have explicitly pointed out that they also wanted to do the same but could not due to physical or structural constraints at their workplaces (PC-screen could not be turned or seating position could not be altered). Regarding analogous resources (e.g. leaflets or brochures) all six advisors integrated them actively in their solution explanation and used it as collaboration material. The advisors stated in the interviews that they wanted to facilitate the mutual information exchange with the clients. Two advisors additionally emphasized that the clients understood the given answers much faster. Furthermore, two of six advisors used, in their post-intervention advisory sessions, additional tools. They used a word processing application (MS Word) to collect the found solution information. At the end of the session they printed the document and gave it to the client. In the interviews one of these advisor summarized their reasons with: “[In the artifact-supported sessions] I liked that I could collect all information on the yellow cards and give them to the clients in the end, [...] so I thought why not using Word and print the sheet [...]”.

Applying social skills (SO 3): Whereas the clients in our test valued the social skills of the advisors rather high (on average, 6.1 on a Likert-scale), our more objective observations from the video analysis revealed that in the pre-intervention advisory sessions all six advisors did only establish a distant relationship to the clients: They spoke to the clients at the beginning of the session to collect the concrete questions and again at the end to hand over the solution. In between they withdrew to search for solutions on their own. In the post-intervention sessions advisors showed a strongly changed behavior. Without external influences five of six advisors establish a close collaborative work environment by proactively including the clients in their search through analogous and digital tools and information resources (cf. apply “tools”-related skills above). The advisors confirmed the observations’

findings: Four advisors stated in the interviews that collaboratively developing solutions with the client would be the most significant added value.

Facilitating a service oriented cognitive change process: Along with the observed enhancements of the advisors' facilitation behavior, the advisors started a more fundamental, service oriented cognitive change process. They became more critical about their service performance and showed a considerable change in their basic understandings of service provision. Compared to their pre-intervention advisory sessions, they rated the quality of their conventional advice-giving lower (from 5.44 to 5.00). Whereas this effect is well-known in IS research (see for instance, Orlikowski, 1995; Riemer and Johnston, 2012), the test gave first evidences of the facilitation artifact's potential to facilitate directing this cognitive change process in pre-planned directions, like e.g., establishing a customer-centric service understanding. In the post-intervention sessions, the advisors were substantially less satisfied with those behaviors, which they got to know as they worked with the facilitation affordances: Compared to the artifact-supported sessions, they perceived that they included the clients less sufficient into the advisory activities, as their ratings for perceived relatedness dropped from 5.44 to 4.67. Furthermore, regarding their media competence, they now perceived themselves as having considerably lesser skills (from 5.25 to 4.28). In the interviews, the advisors gave reason. They mentioned, that it was much easier to establish effective information exchange in the artifact-supported sessions and referred to individual principles of the facilitation affordances, like e.g., the shared information space or the easy-to-use collaboration material. In the interviews, each of the advisors referred to at least one advisory concept from the facilitation affordances, which they intended to adopt in their daily work. One advisor, for instance, stated: "In the future, I would like to work more in this cooperative way with the client, sitting together in front of the system, [...] he comprehends much faster and is more satisfied with the final solution."

Effectiveness: The test showed, that „working with facilitation artifacts“ represents an effective on-the-job qualification measure. The participating clients valued their satisfaction with the post-intervention advisory session substantially higher than with the pre-intervention sessions (on average: 5.37 in the pre-intervention and 6.53 in the post-intervention).

8 Discussion

Our evaluation results indicate, that “working with a artifact providing facilitation affordances”, substantially improves the advice giving behavior of front office employees. Furthermore the evaluation revealed that the observed changes in the advisors' behavior largely correspond with the experiences the advisors made during the artifact-supported advisory sessions. Along with the observed changes in their behavior the advisors furthermore showed a more critical assessment of their work performance. This initiated service oriented cognitive change process indicates that the advisors started to internalize the new advisory concepts and that the potential learning effect would last longer. Summarizing the evaluation provides preliminary support for our working hypothesis: Appropriate design affordances will gently move advisors to trying out novel advisory behaviors during their service encounters and that they will indeed start experiential learning resulting in an improved advice giving behavior. Thus, blending facilitation affordances into experiential learning revealed to be an effective on-the-job qualification measure. figure 7.1 depicts our “learning with facilitation affordances”-approach including short descriptions of each phase.

In our “learning with facilitation affordances”-approach, facilitation affordances are an integral part of an experiential learning cycle (Kolb, 1984) (cf. figure 7.1). Accordingly, when the “learning with facilitation affordances”-approach is implemented, not only an artifact, providing facilitation affordances, must be provided, but also further requirements must be fulfilled occurring within the experiential learning cycle: First, advisors must possess sufficient prior knowledge to perceive and understand the

facilitation affordances (as Guski (1996) pointed out, that perceiving affordances needs to be learned). Second, in their “concrete experience”-phase advisors need a client to get feedback on their changed advice giving behavior (as these effects can only appear in the advisor-client collaboration). And third, after making their experiences advisors must be able to reflect on their experiences and conceptualize. In our evaluation we implemented these requirements: We exposed the advisors, to “new-in-town”-clients and offered them to reflected their experiences in interviews after the test sessions.

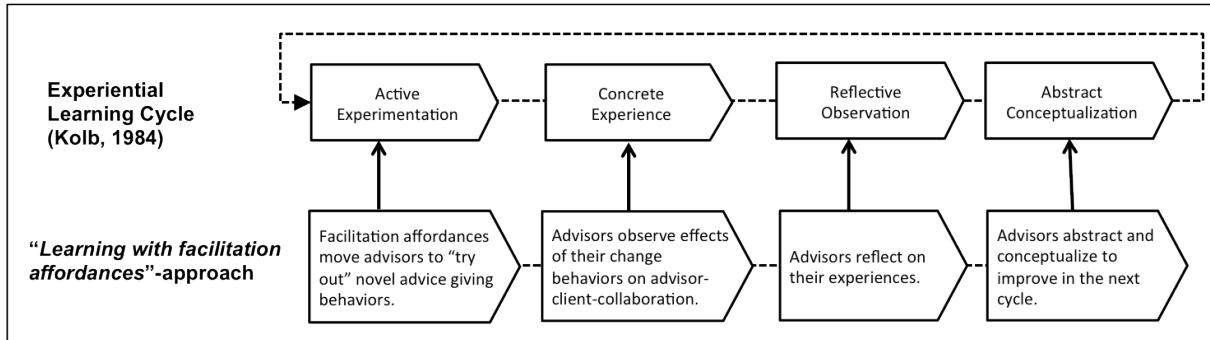


Figure 7.1: The “learning with facilitation affordances” qualification approach: blending facilitation affordances into Kolb’s (1984) experiential learning cycle.

With the developed design principles (cf. 5.2) we explained how the “appropriately designed” affordances in our “learning with facilitation affordances”-approach should be designed. Our evaluation revealed, that the implemented design principles communicated the underlying facilitation concepts well to the advisors: they adopted the idea of the shared information space (first design principle) well, applied analogous and digital information resource as collaboration material (forth design principle) and established as a result a collaborative work environment. The “empty areas” (forth design principle) and the enwrapped tools and information resources (fifth design principle) encouraged the advisors to be more active in the individual problem-solving activities and, hence, to take over the control of the advisory process (second and third design principle).

9 Conclusion

In this paper, we describe a novel approach to qualify service personnel on-the-job using “facilitation affordances”. The introduction of facilitation artifacts into service personnel’s work practices (cf. figure 7.1) brings them to start experiential learning processes (Kolb, 1984), and enables them to learn and improve their advice giving behavior. In the context of citizens’ advice services we tested our approach and found preliminary support for our working hypothesis: First, front office administrators developed, after “working with a facilitation artifact”, substantially improved advice giving behaviors. Second, while giving advice using the facilitation artifact, the administrators were moved to start experiential learning, they experienced novel advice giving behaviors and its effects on the encounter with clients.

Whereas traditional qualification measures focus on enabling employees to operate the available tools, it is essential that service personnel additionally learn how to deliver the value of these tools to the customers, and, thus, provide a superior customer service. In this context, we highlighted the benefits of using affordances in the context of on-the-job learning: An artifact, providing appropriately designed facilitation affordances, made front office employees start experiential learning and, thus, improve their advice giving skills. In this context Bower (2008) or Kirschner (2002) called for deepening the understanding of the relationship between affordances and learning. With our description on how facilitation affordances should be designed to support experiential learning (cf. design principles in 5.2) we answer to their call and directly contribute to this scientific discourse.

With our novel qualification approach for service personnel, applied in the context of citizens' advice services, we continue and extend the work of Leitner (2006), Schuppan (2010), or Hummel and Krcmar (2003) and heed their call to highlight how public employees could concretely develop the necessary skills to work in eGovernment-ready, modern public administrations. Therewith, we directly contribute with our qualification approach to the current scientific discussion on public sector modernization. Furthermore, practitioners in today's public administrations can profit from our findings and apply our "learning with facilitation affordances"-approach to empower their front office advisors. To do so they need to meet the implementation requirements (cf. discussion-section), i.e. having a facilitation artifact, having "clients" for the advisors to make experience and providing a reflection-phase.

With the development of higher-level design principles for facilitation artifacts we argue that our approach can be generalized from the case of citizens' advice services to other service domains like financial advisory services or advisory services in travel agencies. These design principles which empower service personnel in their advisory-related skills on-the-job will guide developers of future advisory support systems, and, thus, can lead to improved customer advisory service. Therewith, we contribute to the design knowledge on advisory information systems adding the aspect of user empowerment and highlighting its implications on system designs.

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